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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/599,867

10/12/2006

David A. Fish

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EXAMINER

BOYD, JONATHAN A

ART UNIT

PAPER NUMBER

2629

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/599,867	<b>Applicant(s)</b> FISH ET AL.	
	<b>Examiner</b> JONATHAN BOYD	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/25/2007</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This office action is in response to application number 10/599966 filed October 12<sup>th</sup> 2006. Claims 1-12 are currently pending and have been examined.

### ***Information Disclosure Statement***

2. Acknowledgment is made of Applicant's Information Disclosure Statement (IDS) Form PTO-1449 filed on September 25<sup>th</sup> 2007. The IDS has been considered.

### ***Claim Objections***

3. Claim 8 objected to because of the following informalities: Claim 8 states "A display device according to claim 7 when dependent from claim 1, wherein...", and since claim 7 was earlier amended to depend only on claim 1, this should be changed too "A display device according to claim 7, wherein...". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Cok et al (6,570,584) (herein "Cok").

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In regards to claim 1, Cok teaches a color electroluminescent display device comprising an array of pixels (*See; Column 3, lines 10-28 for a color OLED display*); wherein: each pixel comprises sub-pixels of two or more main colors (*See; Fig. 5-7 for RGB*); for at least one of the main colors, the pixels comprise first sub-pixels of the main color comprising a first EL material (*R, G, B*) and second sub-pixels of the main color comprising a second EL material (*See; Fig. 5, 6 for C, Y, M*); the first EL material is of a higher lifetime than the second EL material; and the second EL material has a better color point and/or better color rendition properties than the first EL material (*See; Column 2, lines 50-53 and Column 3, lines 43-55 for higher lifetime and better color rendition*).

In regards to claim 2, Cok teaches wherein each pixel comprises a said first sub-pixel of the main color comprising a first EL material and a said second sub-pixel (of the main color comprising a second EL material (*See; Fig. 4-7*)).

In regards to claim 3, Cok teaches further comprising circuitry arranged to drive the display device such that when a color to be displayed by the pixel can be provided with a sufficient color contribution of the main color of the first and second sub-pixels by driving the first sub-pixel without driving the second sub-pixel, then the first sub-pixel is driven but not the second sub-pixel; and further arranged such that when the color or to be displayed cannot be provided with a sufficient color contribution of the main color of the first and second sub-pixels by driving the first sub-pixel without driving the second

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sub-pixel then the second sub-pixel is driven (*See; Column 3, lines 43-55 where the relative power of the various sub pixels may be varied*).

In regards to claim 4, Cok inherently teaches wherein the driving circuitry is arranged such that, when the color to be displayed cannot be provided with a sufficient color contribution of the main color of the first and second sub-pixels by driving the first sub-pixel without driving the second sub-pixel, then the second sub-pixel is driven in addition to driving the first sub-pixel (*See; Column 3, lines 43-55 where the relative power of the various sub pixels may be varied to obtain a given color*).

In regards to claim 5, Cok inherently teaches wherein the driving circuitry is arranged such that, when the color to be displayed cannot be provided with a sufficient color contribution of the main color of the first and second sub-pixels by driving the first sub-pixel without driving the second sub-pixel, then the second sub-pixel is driven instead of driving the first sub-pixel (*See; Column 3, lines 43-55 where the relative power of the various sub pixels may be varied to obtain a given color*).

In regards to claim 6, Cok teaches wherein, for each of the main colors, the pixels comprise first sub-pixels of the main color comprising a first EL material and second sub-pixels of the main color comprising a second EL material; the first EL material is of a higher lifetime than the second EL material; and the second EL material has a better color point and/or better color rendition properties than the first EL material

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*(See; Column 2, lines 50-53 and Column 3, lines 43-55 for higher lifetime and better color rendition for each material).*

In regards to claim 7, Cok teaches wherein, for only the main color blue, the pixels comprise first blue sub-pixels comprising a first EL material and second blue sub-pixels comprising a second EL material; the first EL material is of a higher lifetime than the second EL material; and the second EL material has a better color point and/or better color rendition properties than the first EL material (*See; Column 2, lines 50-53 and Column 3, lines 43-55 and Fig. 4-7 where the pixels can be arbitrarily selected so that they all, or not, contain an extra long lifetime sub pixel*).

In regards to claim 8, Cok teaches wherein some of the pixels comprise a said first blue sub-pixel and not a said second blue sub-pixel; and the remaining pixels comprise a said second blue sub-pixel and not a said first blue sub-pixel (*See; Column 2, lines 50-53 and Column 3, lines 43-55 and Fig. 4-7 where the pixels can be arbitrarily selected so that they all, or not, contain an extra long lifetime sub pixel*).

In regards to claim 9, Cok teaches wherein the main colors are red, green and blue (*See; Fig. 4-7*).

In regards to claim 10, Cok teaches a method of driving a color electroluminescent, EL, display device (*See; Column 3, lines 10-28 for a color OLED*

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*display*), comprising: determining whether a sufficient color contribution to a color hue to be displayed can be provided by a first sub-pixel of a pair of color sub-pixels of a given color, wherein the first sub-pixel of the pair comprises a first EL material (See; *Fig. 5-7 for RGB*) and the second sub-pixel of the pair comprises a second EL material (See; *Fig. 5, 6 for C, Y, M*), the first EL material being of a higher lifetime than the second EL material, and the second EL material having better color points and/or better color rendition properties than the first EL material (See; *Column 2, lines 50-53 and Column 3, lines 43-55 for higher lifetime and better color rendition*); if a sufficient color contribution can be provided, driving the first sub-pixel but not the second sub-pixel; and if a sufficient color contribution cannot be provided, driving the second sub-pixel (See; *Column 3, lines 43-55 where the relative power of the various sub pixels may be varied*).

In regards to claim 11, Cok teaches wherein, if a sufficient color cannot be provided, the step of driving the second sub-pixel is performed in addition to driving the first sub-pixel such that both the first and second sub-pixel make a color contribution to the color hue to be displayed (See; *Column 3, lines 43-55 where the relative power of the various sub pixels may be varied to obtain a given color*).

In regards to claim 12, Cok teaches wherein, if a sufficient color cannot be provided, the step of driving the second sub-pixel is performed instead of driving the first sub-pixel such that the second sub-pixel makes a color contribution to the color hue

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to be displayed but the first sub-pixel does not make a contribution to the color hue to be displayed (*See; Column 3, lines 43-55 where the relative power of the various sub pixels may be varied to obtain a given color*).

### **Conclusion**

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Smith (6,262,710) for a similar OLED driving scheme.

Miller et al. (2004/0178974) for an OLED display for controlling color gamut.

Booth, JR (2003/0011613) for a wide gamut color display.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN BOYD whose telephone number is (571)270-7503. The examiner can normally be reached on Mon - Fri 6:00 - 4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. B./  
Examiner, Art Unit 2629

/Amr Awad/  
Supervisory Patent Examiner, Art Unit 2629